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Contact: Ben Sherman
301-713-3066 ext. 178

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INTERAGENCY REPORT SAYS HARMFUL ALGAL BLOOMS INCREASING
Calls for Improved Research on Prediction and Response

The National Oceanic and Atmospheric Administration and the National Science and Technology Council released today an interagency report on the United States's efforts to better predict, prevent, control, and mitigate harmful algal blooms. The report is the first of five mandated by Congress in the Harmful Algal Bloom and Hypoxia Amendments Act of 2004.

"Harmful algal blooms are very complex phenomena that cause serious economic harm. This report provides an important overview of the current status of efforts to respond to harmful algal blooms in our coastal and inland waters and is the first step in developing a national plan to improve those efforts," said retired Navy Vice Adm. Conrad C. Lautenbacher, Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The report, National Assessment of Efforts to Predict and Respond to Harmful Algal Blooms in U.S. Waters, also known as the Prediction and Response Report, assesses the harmful algal bloom problem in U.S. waters and identifies progress made since 2000 by federal agencies in prevention, control, and mitigation of harmful algal blooms in the U.S.

The report calls for the coordinated federal program to develop a strategy for maximizing progress in areas identified for major potential advancement including:

- a refined focus on research for prevention, control, and mitigation of harmful algal blooms,
- sustained and coordinated infrastructure, including increasing availability of standards and probes, shared-use facilities, platforms for continuous real-time monitoring, and training,
- incorporating social sciences in harmful algal bloom response strategies, and
- improving and coordinating event response.

The study reports that the frequency of harmful algal bloom events is increasing and their geographical distribution now impacts all the coastal states. Freshwater harmful algal blooms are an increasing problem in inland states as well. Human activities such as nutrient pollution are thought to contribute to some of these increases.

The economic effects of harmful algal blooms in the U.S. is estimated to reach at least $82 million per year in lost income for fisheries, lost recreational opportunities, decreased tourism, public health costs of illness, and expense of monitoring and management.

Harmful algal blooms may produce toxins and/ or develop excess biomass that negatively impact humans and ecosystems. Humans, domestic animals, and wildlife can be exposed to algal toxins through their food, drinking water, the water in which they swim, and the air near the water, resulting in fish kills, mortality of protected species, and human illness and potentially even death. High biomass blooms can discolor the water, impart foul odors and tastes to drinking water, accumulate in large quantities on beaches, overgrow coral reefs, shade aquatic plants, and upon death, deplete the water of oxygen.

The report notes that since 2000 advances are being made, notably in the area of mitigation, leading to improved monitoring, prediction, and event response. Specifically,

significant advances have been made in cell and toxin detection technologies, which allow improved early warning of bloom events and toxicity to help managers prevent human poisonings while minimizing economic impacts on local communities.

Newly developed technologies can be used for rapid toxin detection in the field and others can be deployed for automated, real-time detection of events. Some have potential for use as official methods for regulatory purposes and others can be used to assess toxin exposure in humans and in marine mammals and birds. Satellite and automated underwater vehicle tracking of bloom events coupled with transport models has helped coastal managers predict bloom movement for more effective management. Federal response to events has also improved significantly.

NOAA teams with officials in Florida to issue twice weekly operational harmful algal bloom regional forecasts which are giving coastal managers advance planning time in determining whether to close beaches or restrict fishing or other coastal activities that could otherwise harm human health.

Prevention of blooms remains the ultimate management goal, but is still not possible in many cases due to the complexity of harmful algal organisms and the varying ecosystems in which they live. However, research to advance understanding of bloom initiation, development, transport, and decline is moving toward this goal.

Together, the Prediction and Response Report and a June 2007 workshop are guiding the development of a National Scientific Research, Development, Demonstration, and Technology Transfer Plan for Reducing HAB Impacts which will establish research priorities and put forth a coordinated strategy for improving harmful algal bloom prevention, control, and mitigation. This report is due at year's end.

NOAA and the Centers for Disease Control and Prevention led the effort to generate this report as co-chairs of the Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health. The Interagency Working Group was tasked, under the President's Ocean Action Plan by the Joint Subcommittee on Ocean Science and Technology as the coordinating body to fulfill *HABHRCA* reporting requirements. Representatives from NASA, USGS, FDA, NSF, Marine Mammal Commission, National Institute of Environmental Health Sciences, EPA, and the Department of Agriculture are all members of the interagency group.

NOAA, an agency of the U.S. Commerce Department, is celebrating 200 years of science and service to the nation. From the establishment of the Survey of the Coast in 1807 by Thomas Jefferson to the formation of the Weather Bureau and the Commission of Fish and Fisheries in the 1870s, much of America's scientific heritage is rooted in NOAA.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

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